INTERAVIA

World Review of Aviation • Astronautics • Avionics

incorporating

FLYING REVIEW INTERNATIONAL

Contents for Year 1972 — Volume XXVII

Civil aviation

Air Transport

Air Inter and Air France—crew training for automatic flight: 1/63

The A.300B Airbus—combining European experience: 1/65

IATA fiddles while the problems burn—the 27th AGM: 1/82

BEA's low visibility programme: 2/123

Concorde's automatic flight control system: 2/126

Aeroflot—the fastest growing airline: 2/162

Facts and figures for reflection: 2/107

The DC-10 flight guidance system: 3/72

Instrument landing system—Radio landing aids from the Zeppelin to Category III—E. Kramer: 3/246

Plessey's move into Category III ILS: 3/249

ILS—made in France: 3/250

Automated navigation management in the cockpit: 3/258

Is ICAO fully equipped to meet the challenge of modern technology? T.M.B. Wright: 3/251

A new fare deal: 3/197

Lufthansa cargo—enter the jumbo: 3/230

Landing systems for future civil and military operations—M.Bohm: 4/394

Boeing's Medium Haul Challenger: The Advanced 727-200: 4/347

The changing face of air transport:
Part 1 — What lies in store for the airlines? R. Wild: 4/367
Part 2 — Problems of management in airlines S. Morse: 4/369

Mercure—a product of international co-operation: 5/465

Towards an integrated transport system: 5/445

Collision avoidance systems controversy: 5/472

Airport lighting and power supplies—the final landing aid: 5/499

Airport planning requirements—an airline view—R. J. Sutherland: 6/637

Airport terminal design—The Passenger's Point of View—R. H. Wild: 6/640

On-Airport Transfer Functions—O. D. Bennett & M. J. Overall: 6/642

Frankfurt Rhine-Main: the troubled history of a major airport—K. Höhle: 6/644

Before Madrid — Opportunities missed: 6/577

Lufthansa's Boeing 747F operation: 6/657

Will the Madrid message get through? A postscript to the First World Congress on Air Transportation and Tourism—J. F. Brindley: 6/656

Implementing area navigation: 6/616

The long road to Category III—the ninth and final part of a series on automatic flight: 6/620

The Swiss air transportation scene—J. F. Brindley: 7/716

Radio Suisse—Switzerland's link with the world: 7/779

Supersonic travel is worthwhile: 8/805

Financing Concorde sales: 8/827

The economics of Concorde: 8/828

Hawaiian Airlines—island-hoppers incorporated —J. P. Geddes: 8/863

Interavia-Data—International Organisations: ICAO: 8/873

1971 Scheduled Traffic of IATA Airlines: 9/932

A new look for British airlines: 9/964

Pillars of World Air Transport: 9/978

Interavia Data—International Organisations: IATA: 9/988

Over or under the water? A place for both V/Stol and rail—K. W. Clark: 9/1010

South African Airways—Africa's largest air carrier—A. J. Venter: 10/1099

Fokker F.28 capabilities on unpaved runways: 10/1069

IATA's 28th Annual General Meeting—The message was "Adapt or die"—M. Nibloe: 11/1192

Improving load factor control—J. Monbeig & A. Sypkens: 11/1205

Air India: keeping abreast of the rest—B. J. G. Davidson: 11/1240

Safety in Air Transport: 11/1242

An era of change in aircraft maintenance—E. L. Takacs: 11/1246

Douglas on first year of the DC-10—W. W. Way: 12/1358

China's plans for worldwide air services—G. Gregory: 12/1356

United Air Lines' view of the DC-10: 12/1360

Business aviation

Another thoroughbred from Dassault: Falcon 10 Flight Report—D. H. Chopping: 2/147

Cessna and Reims: bigger sales push in 1972: 2/150

Newest member of the Cessna family: the 340: 2/153

Flying the Cessna Citation—D. H. Chopping: 5/470

American light aircraft deliveries: 6/658

SAR—rescuer with wings: 7/724

A plethora of lightplanes: 7/762

The 1972 Reading Show—D. Cornell: 8/810

European air taxi operations—C. Sessoms: 10/1089

Production Corvette ready for flight test—M. Grangier: 10/1092

New power proposal for Lockheed JetStar—J. P. Geddes: 10/1094

US ATC changes boost avionics demands—J. Holahan: 10/1096

Sea bridge—Land to rig helicopter link—J. D. Ferguson: 11/1214

Helicopter operations at interflug—K. Höhle: 11/1216

The Year of the Business Jet—A report on the NBAA show—J. P. Geddes: 11/1257

Airports

Dissemination of meteorological information at large airports—L. Thibord: 1/76

Strüver's new look refuellers: 2/168

Airport lighting and power supplies—the final landing aid: 5/499

Airport planning requirements—an airline view—R. J. Sutherland: 6/637

Airport terminal design—The Passenger's Point of View—R. H. Wild: 6/640

On-Airport Transfer Functions—O. D. Bennett & M. J. Overall: 6/642

Frankfurt Rhine-Main: the troubled history of a major airport—K. Höhle: 6/644

International Airport Construction & Equipment Exhibition and Congress of the International Civil Airport Association: 6/657

Swiss airports—an environmental/financial dilemma?—J. F. Brindley: 7/720

Airports and equipment manufacturers under one roof—K. Höhle: 8/870

The 12th ICAA Congress—K. Höhle: 9/1029

Paris Airport's Jacques Block looks toward 2000—K. Höhle: 10/1102

Roissy-en-France—Massive dimensions in manageable units—K. Höhle: 11/1208

Civil aircraft

Mercure status briefing—R. Salvy: 1/78

Another thoroughbred from Dassault. Falcon 10 Flight Report—D. H. Chopping: 2/147

Newest member of the Cessna family: the 340: 2/153

Concorde shows its paces: 3/225

DC-10 Design Development—R. E. Bates: 3/228

The A.300B Airbus: A European aircraft challenges a difficult market: 4/334

Bo-105: Germany's first helicopter in series production: 4/344

Boeing's Medium-Haul Challenger: The Advanced 727-200: 4/347

Mercure—a product of international co-operation: 5/465

Flying the Cessna Citation—D. H. Chopping: 5/470

Lufthansa's Boeing 747F operation: 6/657

Lockheed's Hercules: The goodwill aircraft: 6/647

The fire-fighting Puma: 7/756

Postscript to April's Airbus feature: 7/768

Who's going to buy Concorde?: 8/825

The economics of Concorde: 8/828

Interavia Data—Concorde: 8/831

The thermal fatigue test installation for Concorde: 8/875

The McDonnell Douglas DC-9-50: 8/976

Interavia Data: Boeing 747: 9/1035

Production Corvette ready for flight test—M. Grangier: 10/1092

New power proposal for Lockheed JetStar—J. P. Geddes: 10/1094

The SA.360—Aérospatiale's new baby—M. Grangier: 10/1124

The Bo 105. A new pattern in helicopters—E. K. Barnes: 10/1126

Interavia Data: Lockheed L-1011 TriStar: 10/1142

Fokker F.28 capabilities on unpaved runways: 10/1069

Interavia Data: Airbus A.300B: 11/1211

Douglas on first year of the DC-10—W. W. Way: 12/1358

United Air Lines view of the DC-10: 12/1360

Interavia Data: McDonnell Douglas DC-10: 12/1361

Military aviation

Military aircraft

Testing the Tomcat: 1/35

Lockheed S-3A Viking. A new weapon against the submarine: 1/59

Panavia 200 becoming reality: 4/342

Bo-105: Germany's first helicopter in series production: 4/344

AWACS takes off: 4/392

The AXs are here: 6/581

Britain needs 175 P.1182s: 6/595

Engineering the B-1 design—I. Stambler: 6/610

Lockheed's Hercules: The goodwill aircraft: 6/647

General Dynamics and Northrop to build Lightweight Fighter prototypes: 7/693

The F-15 Eagle starts flight trials: 8/813

The A-9A—Northrop's AX entry— J. P. Geddes: 8/865

The Fairchild A-10A: 8/868

Panavia 200 equipment contracts—the list lengthens: 9/1032

US Strategic Weapons Programmes Review: 11/1248

Miscellaneous

Crotale—looking for orders: 3/232

Developments in US military reconnaissance: 4/373

A decade of US reconnaissance satellites—A. Galloway: 4/376

Landing systems for future civil military operations—M. Bohm: 4/394

New sensors for airbone reconnaissance: 5/489

Developments in reconnaissance equipment—a review of some new systems: 5/494

Is the Airfield the Achilles Heel of the conventional combat aircraft?—A. W. Bedford: 5/497

SRAM enters the USAF inventory—J. P. Geddes: 6/614

CSE Aviation Limited: In the service of general aviation: 6/618

Florida—the key to Switzerland's air defences: 7/713

On "flying before buying" and other matters: 7/689

The SALT agreement: 7/700

The evolution of Head-Up Displays—J. H. Smith: 8/858

Meeting the new threat—the UK plans a flexible response: 9/960

The real Achilles Heel—N. Hannig: 9/1021

Rapier enters service: 9/1024

A proposal for a new guidance principle—Sagittarius: 10/1133

The development process of a weapon system: 10/1134

Farnborough 72—equipment and missiles: 11/1194

US Strategic Weapons Programmes Review: 11/1248

Does the Space Shuttle need military backing?—A. Galloway: 12/1327

Space

Will Europe buy American launch vehicles? 1/19

Kourou—Europe's equatorial space centre—M. Deskau: 1/38

Europa F11 launch: a watery grave—M. Deskau: 1/41

The 1970 CECLES/ELDO report to the Council of Europe: 1/43

Mariner 9: a successful mission to Mars: 1/81

Progress in the exploration of Mars: 3/212

Germany's space policies: 4/345

A decade of US reconnaissance satellites—A. Galloway: 4/376

Does the USA really want space collaboration?: 4/301

Salyut: the first space laboratory: 4/306

The Europe 3 carrier rocket system—H. E. W. Hoffmann: 4/398

Lunar mission Apollo 16: new problems and achievements: 6/599

The damp squib—the UK and Europe in space: 9/945

The European-US space alliance in jeopardy: 9/921

ELDO's uncertain outlook: 9/922

Space "plum" for North American Rockwell: 9/929

Goonhilly 3 goes on the air: 9/955

ESRO scientific satellites: 9/1006

Weightlessness trails at ONERA—J. Spincourt: 9/1030

The results of Soviet research into Mars—P. Smolders: 10/1139

Exploring the secrets of Venus for 50 minutes: 11/1191

Europe's space planning in a crisis situation: 12/1305

US conditions for delivering launch vehicles: 12/1307

Impressions of the 23rd IAF Congress—J. Gegerle: 12/1315

The value of space research to humanity—W. von Braun: 12/1321

Does the Space Shuttle need military backing?—A. Galloway: 12/1327

Space Shuttle Basics—J. P. Geddes: 12/1331

The benefits of space exploration related to the Space Shuttle—G. E. Mueller: 12/1335

Apollo 17: the end of the road: 12/1372

Powerplants

Soviet civil gas turbine engines: 2/158

The RB.211 affair—continued: 3/216

Variable pitch fans—D. G. M. Davis: 3/241

Pratt & Whitney working on JT9D growth: 7/767

The Olympus 593 Mk 602 engine: 8/835

The reorganisation of Rolls-Royce: 9/946

New power proposal for Lockheed JetStar—J. P. Geddes: 10/1094

Farnborough 72—equipment and missiles: 11/1194

Building Aerospace Turbines in Phoenix—J. G. Geddes: 11/1218

A method of early failure detection for gas turbines—J. K. Barugh: 12/1367

Gas turbines leave the air: 12/1373

Avionics

Air Inter and Air France—crew training for automatic flight: 1/63

The A.300B Airbus—combining European experience: 1/65

BEA's low visibility programme: 2/123

Concorde's automatic flight control system: 2/126

The DC-10 flight guidance system: 3/244

Instrument landing system—Radio landing aids from the Zeppelin to Category III—E. Kramar: 3/246

Plessey's move into Category III ILS: 3/249

ILS—made in France: 3/250

Automated navigation management in the cockpit: 3/258

Is ICAO fully equipped to meet the challenge of modern technology?—T. M. B. Wright: 3/251

AWACS takes off—J. P. Geddes: 4/392

Landing systems for future civil and military operations—M. Bohm: 4/394

Collision avoidance systems controversy: 5/472

Aerospace electronics in Italy: 6/608

Implementing area navigation: 6/616

The long road to Category III—the ninth and final part of a series on automatic flight: 6/620

Florida—the key to Switzerland's air defences: 7/713

Radio Suisse—Switzerland's link with the world: 7/719

French industry's stake in the avionics equipment field—J.-M. Treille: 7/749

The French aviation equipment industry—some of the major companies: 7/752

Challenge from the south—reflections on the Italian industry: 8/856

The evolution of Head-Up Displays—J. H. Smith: 8/858

Goonhilly 3 goes on the air: 9/955

Collision avoidance procrastination continues: 9/1005

50 years of Hollandse Signaalapparaten: 9/1023

Panavia 200 equipment contracts—the list lengthens: 9/1032

A proposal for a new guidance principle—Sagittarius: 10/1133

The development process of weapon system: 10/1134

Industry

Aviaexport pushes into the World Market: 2/154

Cessna and Reims: bigger sales push in 1972: 2/150

Facts and figures for reflection: 2/107

Clear air turbulence detection by infra-red photography and radiometry: 3/256

Development Cost and Profit—R. H. Wild: 3/198

The RB.211 affair—continued: 3/216

Crotale—looking for orders: 3/232

New fibre composite materials—J. Spincourt: 3/260

Germany's aerospace industry 1972: Record turnover and growing indebtedness: 4/328

Germany's space policies: 4/345

Integrated Drive Generators for Aircraft—R. J. Kennett: 4/402

High speed surface transportation—Rail challenges air on intercity routes—M. Nibloe: 5/510

The challengers—M. Brown: 5/512

The defender—R. H. Wild: 5/521

HSST in a total transportation system—M. Overall & O. Bennett: 5/522

Transpo 72 opens its doors—H. Simmons: 5/531

Developments in reconnaissance equipment—a review of some new systems: 5/494

Towards an integrated transport system: 5/445

Politics take precedence—reflections on Hanover 1972—M. Brown: 6/596

The Italian aerospace industry takes stock: 6/605

Aerospace electronics in Italy: 6/608

CSE Aviation Limited: In the service of general aviation: 6/618

American light aircraft deliveries: 6/658

The Swiss aerospace industry—a neglected child—F. Müller: 7/709

French industry's stake in the avionics equipment field—J.-M. Treille: 7/749

The French industry's performance: 7/751

The French aviation equipment industry—some of the major companies: 7/752

Further reflections on Hanover—the mixture as before: 7/758

A plethora of lightplanes: 7/762

Space sidelines at Hanover: 7/764

Who's going to buy Concorde?: 8/825

Financing Concorde sales: 8/827

The thermal fatigue test installation for Concorde: 8/875

Transpo 72—for people on the move—M. P. Brown: 8/837

Italy pushes collaboration at Turin—M. Grangier: 8/853

Airports and equipment manufacturers under one roof—K. Höhle: 8/870

Challenge from the south—reflections on the Italian industry: 8/856

UK and the EEC. Effect of entry on aerospace industry: 9/941

A time for firmness: 9/944

The damp squib—the UK and Europe space: 9/945

The reorganisation of Rolls-Royce: 9/946

The case for collaboration—British avionics looks at Europe: 9/957

Space "plum" for North American Rockwell: 9/929

Collosion avoidance procrastination continues: 9/1005

Over or under the water? A place for both V/Stol and rail—K. W. Clark: 9/1010

50 years of Hollandse Signaalapparaten: 9/1023

Farnborough Europe 72—the SBAC goes multilingual. A first report by John Brindley and Michael Brown: 10/1085

Improving the helicopter—what next?: 10/1121

The SA.350—Aérospatiale's new baby—M. Grangier: 10/1124

The Bo 105. A new pattern in helicopters—E. K. Barnes: 10/1126

Common Market aviation policy—are the motives correct?: 11/1173

Farnborough 72—equipment and missiles: 11/1194

Building Aerospace Turbines in Phoenix—J. P. Geddes: 11/1218

Indian aerospace—closing the technology gap—B. J. G. Davidson: 11/1237

Brno: the Czechoslovakian shop window—U. V. Nagel: 11/1260

Hendrik van Meerten—40 years with Fokker: 12/1316

Bright future forecast for composites in aerospace—I. Stambler: 12/1363

Icing trials in a large wind tunnel—H. Schausberger & F. Schramke: 12/1369

Air Shows, conferences and exhibitions

IATA fiddles while the problems burn—the 27th AGM: 1/82

Transpo 72 opens its doors—H. Simmons: 5/531

International Airport Construction & Equipment exhibition and Congress of the International Civil Airport Association: 6/657

Will the Madrid message get through? A postscript to the First World Congress of Air Transportation and Tourism—J. F. Brindley: 6/656

Politics take precedence—reflections on Hanover 1972—M. Brown: 6/596

Further reflections on Hanover—the mixture as before: 7/758

A plethora of lightplanes: 7/762

Space sidelines at Hanover: 7/764

The 1972 Reading Show—D. Cornell: 8/810

Transpo 72—for people on the move—M. P. Brown: 8/837

Italy pushes collaboration at Turin—M. Grangier: 8/853

The 12th ICAA Congress—K. Höhle: 9/1029

Farnborough Europe 72—the SBAC goes multilingual. A first report by John Brindley and Michael Brown: 10/1085

IATA's 28th Annual General Meeting—The message was "Adapt or die"—M. Nibloe: 11/1192

The Year of the Business Jet—A report on the NBAA show—J. P. Geddes: 11/1257

Common Market aviation policy—are the motives correct?: 11/1173

Farnborough 72—equipment and missiles: 11/1194

Brno: Czechoslovakian shop window—U. V. Nagel: 11/1260

Impressions of the 23rd IAF Congress—J. Gegerle: 12/1315

Tables

Aviaexport pushes into the World Market: 2/154

Soviet civil gas turbine engines: 2/158

Germany's aerospace industry 1972: Record turnover and growing indebtedness: 4/328

American light aircraft deliveries: 6/658

The French industry's performance 7/741

1971 Scheduled Traffic of IATA Airlines: 9/932

Pillars of World Air Transport: 9/978

ESRO scientific satellites: 9/1006

Regular features

The industrial Scene: 1/72—2/128—3/251—4/389—5/502—6/650—7/758—8/860—9/1025—10/1129—11/1250—12/1353

For business and private pilots: 1/26—2/112—3/203—5/450—6/584—7/694—8/809—9/926—10/1072—11/1174—12/1308

Space news in brief: 1/24—2/114—3/211—4/308—5/452—6/582—7/696—8/812—9/928—10/1070—11/1176

The World of Aerospace: 1/20—2/108—3/199—4/302—5/446—6/578—7/690—8/806—9/923—10/1066—11/1178—12/1310

International Aviation Digest: 1/27—2/115—3/214—4/317—5/453—6/593—7/697—8/815—9/930—10/1081—11/1189—12/1313

Book reviews: 1/84—2/169—3/261—5/503—9/1034—11/1262

Calendar: 1/84—2/170—3/261—4/320—5/533 6/595—7/769—8/876—9/1034—10/1145—11/1262—12/1371

Letters to the editor: 2/169—7/769—9/1033—10/1145—11/1262—12/1371

AUTHORS

Barugh J. K.—A method of early failure detection for gas turbines: 12/1367

Bates R. E.—DC-10 Design Development: 3/228

Bedford A.W.—Is the Airfield the Achilles Heel of the conventional combat aircraft?: 5/497

Bennett O. and Overall M.—HSST in a total-transportation system: 5/522

On-Airport Transfer Functions: 6/642

Berchtold M. and Weiss H.—Proposal for a thermal system to improve runway visibility: 6/654

Böhm M.—Automatic flight—Part 7: Landing systems for future civil and military operations: 4/394

von Braun W.—The value of space research to humanity: 12/1321

Chopping D. H.—Another thoroughbred from Dassault. Falcon 10 Flight Report: 2/147

Flying the Cessna Citation: 5/470

Clark K. W.—Over or under the water? A place for both V/Stol and rail: 9/1010

Cornell D.—The 1972 Reading Show: 8/810

Davidson B. J. G.—Air India: keeping abreast of the rest: 11/1240

Indian aerospace—closing the technology gap: 11/1237

Davis D. G. M.—Variable pitch fans: 3/241

Ferguson J. D.—Sea bridge—Land to rig helicopter link: 11/1214

Galloway A.—A decade of US reconnaissance satellites: 4/376

Does the Space Shuttle need military backing? 12/1327

Geddes J. P.—AWACS takes off: 4/392

Two years of Boeing 747 operations: 5/455

SRAM enters the USAF inventory: 6/614

The A-9A—Northrop's AX entry: 8/865

Hawaiian Airlines—island-hoppers incorporated: 8/863

New power proposal for Lockheed JetStar: 10/1094

The Year of the Business Jet—A report on the NBAA show: 11/1257

Building Aerospace Turbines in Phoenix: 11/1218

Space Shuttle Basics: 12/1331

Gregory G.—Peking reaches for the sky: 7/765 China's plans for worldwide air services: 12/1356

Hannig N.—The real Achilles Heel: 9/1021

Hoffmann E. W.—The Europa 3 carrier rocket system: 4/398

Holahan J.—US ATC changes boost avionics demands: 10/1096

Hyde F. W.—Pipe dream or possibility: 9/1008

Kramar E.—Instrument landing system—Radio landing aids from the Zeppelin: 3/246

Kennett R. J.—Integrated Drive Generators for Aircraft: 4/402

Monbeig J. and Sypkens A.—Improving load factor control: 11/1205

Morse S.—Problems of management in airlines: 4/369

Mueller G. E.—The benefits of space exploration related to the Space Shuttle: 12/1335

Müller F.—The Swiss aerospace industry—a neglected child: 7/709

Overall M. and Bennett O.—HSST in a total transportation system: 5/522

On-Airport Transfer Functions: 6/642

Sagittarius—A proposal for a new guidance principle: 10/1133

Schausberger H. and Schramke F.—Icing trials in a large wind tunnel: 12/1369

Sessoms C.—European air taxi operations: 10/1089

Simmons H.—Transpo 72 opens its doors: 5/531

Smith J. H.—The evolution of Head-Up Displays: 8/858

Smolders P.—Salyut: the first space laboratory: 4/306

The results of Soviet research into Mars: 10/1139

Spincourt J.—New fibre composite materials: 3/260

Weightlessness trials at ONERA: 9/1030

Stambler I.—Engineering the B-1 design: 6/610

Bright future forecast for composites in aerospace: 12/1363

Sutherland R. J.—Airport planning requirements an airline view: 6/637

Sypkens A. and Monbeig J.—Improving load factor control: 11/1205

Takacs E. L.—An era of change in aircraft maintenance: 11/1246

Thibord L.—Dissemination of meteorological information at large airports: 1/76

Treille J.-M.—French industry's stake in the avionics equipment: 7/749

Venter A. J.—South African Airways—Africa's largest air carrier: 10/1099

Waldis A.—The Swiss Transport Museum: 7/722

Way W. W.—Douglas on first year of the DC-10: 12/1358

Weiss H. and Berchtold M.—Proposal for a thermal system to improve runway visibility: 6/654

Wild R. H.—Development Cost and Profit: 3/198

What lies in store for the airlines? 4/367

The defender: 5/521

Airport terminal design—The Passenger's Point of View: 6/640

Wright T. M. B.—Is ICAO fully equipped to meet the challenge of modern technology?: 3/251